Lesson 41 - Thanks For Not Smoking

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- Article #1: A Small Fire at One End and a Big Fool at the Other By Dr. Keki R. Sidhwa, N.D., D.O.

1. History

American Indians smoked tobacco in pipes long before Christopher Columbus sailed to the New World in 1492. Columbus brought some tobacco seeds back to Europe, where farmers began to grow the plant for use as a medicine that supposedly helped people relax. In 1560, a French diplomat named Jean Nicot —from whom tobacco receives its botanical name, "Nicotiana"—introduced the use of tobacco in France.

Commercial production of tobacco began in North America in 1612, after an English colonist named John Rolfe brought some tobacco seeds from South Carolina to Virginia. The Virginia soil and climate were excellent for tobacco, and it became an important crop there and in other parts of the South.

Most of the tobacco grown in the American Colonies was exported to England until the Revolutionary War began in 1775. Manufacturers in the United States then began to produce smoking tobacco, chewing tobacco, and snuff for domestic use. Cigars were first manufactured in the United States in the early 1800s.

Spaniards and some other Europeans began to smoke hand-rolled cigarettes in the 1600s, but few people in the United States used them until the 1850s. Cigarette smoking became increasingly popular after the first practical cigarette-making machine was invented in the early 1880s.

Hand-rolled cigarettes achieved limited popularity in the United States between 1855 and 1885. They contained either straight Turkish tobacco, straight flue-cured tobacco, or a blend of the two. The first practical cigarette-making machine was invented in the early 1880s. Cigarette companies introduced domestic blends about 30 years later.

2. The Tobacco Plant

Tobacco is a plant whose leaves are used chiefly in making cigarettes and cigars. Other tobacco products include smoking tobacco for pipes, chewing tobacco, and snuff.

Tobacco ranks as a major crop in more than 60 countries. During the late 1970s, the annual worldwide production of tobacco totaled about six-million tons. Farmers in the United States produce about 705 million cigarettes and about 3 1/2 million cigars yearly. About 160 million pounds of tobacco are manufactured annually for smoking tobacco, chewing tobacco, and snuff. The annual value of tobacco products amounts to about $19 billion. Most of this income comes from domestic sales of the products. As you can see, many people are getting rich at the expense of the nation's health.

The government encourages and supports the growth and manufacture of tobacco and its products since it receives a large income through taxes on tobacco. Tobacco products are also taxed by all the state governments and some local governments. Taxes on tobacco total about three times the amount that the growers receive for their crops. The officials of our government are well aware of the health dangers of tobacco, yet they continue to support this industry.

Once tobacco is harvested, it goes through a curing process. This process produces various chemical changes in the tobacco that supposedly improve its flavor and aroma. There are three methods of curing tobacco: (1) air curing, (2) fire curing, and (3) flue curing. Each type of tobacco responds differently to each of these methods.

Air curing uses natural weather conditions to dry tobacco. Air-curing barns have ventilators that can be opened and closed to control the temperatures and humidity. This process takes from four to eight weeks.

Fire curing dries tobacco with low-burning fires. The smoke gives fire-cured tobacco its distinctive taste and aroma. Farmers regulate the heat, humidity, and ventilation in the curing barns so the leaves will not be scalded. Fire curing takes from three days to six weeks. This smoking process adds more toxins to the already toxic tobacco. It has been proven that anything that has been smoked is carcinogenic when ingested (as in cigarette smoking when smoke enters the lungs).

Flue curing dries tobacco by heat from flues (pipes) connected to furnaces. The temperature is gradually raised from 90°F. to 160°F. until the leaves are completely dry. The flue-curing method takes about a week.

Freshly-cured tobacco has a sharp aroma and bitter taste as would any poison. Therefore, most tobacco is put into storage and allowed to age before being used in manufacturing tobacco products.

Prior to storage, most tobacco goes through a redrying process, during which it is completely dried and cooled. Manufacturers then restore some water throughout the leaves to ensure uniform moisture content. This practice prevents the leaves from breaking.

Next, tobacco is stored for two or three years in barrel-like containers. During storage, it ages and undergoes a chemical change called fermentation (fermentation is decomposition of sugar and starch and their conversion by microorganisms to carbon dioxide, alcohol and acetic acid—poisonous by-products). This fermentation is said to give tobacco a sweeter, milder flavor and aroma and reduce its nicotine content. They are, in effect, exchanging poison for poison. Tobacco also loses moisture and becomes darker during aging.

A somewhat different procedure is used to age cigar leaf tobacco, which does not require redrying. Bales of this tobacco are placed in heated rooms or are simply hung up to ferment before storage.

If you were to take any healthful food (which tobacco is not) like romaine lettuce, and submit it to the same processing as tobacco goes through, you would end up with a toxic poison. With tobacco, you

begin with a poisonous plant and render it more poisonous through this manufacturing process.

Most tobacco grows best in a warm climate and in carefully drained and fertilized soil. Growers and consumers would greatly benefit by utilizing these ideal growing conditions for fruit and nut trees. Pecan trees, for example, produce abundantly, require little maintenance, and their produce is easily harvested. Pecans are in high demand for their superior flavor and nutrient value. They also bring a good price on the market. Tobacco is also heavily sprayed with expensive insecticides but this is not necessary (or desirable) with pecan trees. Tobacco has no nutritional or other benefits and its only effects are bad ones. On the other hand, pecans are high in protein of the best biological order and contain oils that are easily digested and utilized, thus making them useful dietary items. In addition, there are no harmful toxins.

3. The Dangers Are Realized

The use of tobacco products has been controversial for many years. During the 1500s, European physicians declared that tobacco should be used only for medicinal purposes. The Puritans in America considered it a dangerous narcotic. During the 1960s, scientists established that smoking tobacco products—especially cigarettes—could result in lung cancer, heart disease, and other illnesses.

Some cigarette manufacturers reacted to the medical findings by reducing the tar and nicotine content of cigarettes. However, doctors state that these measures have not eliminated the dangers of smoking.

Various federal laws have been passed in the United States regarding the sale of tobacco products. Since 1966, manufacturers have been required to include a health warning on all packages and cartons of cigarettes. Another law, which went into effect in 1971, banned radio and television commercials advertising cigarettes. In 1972, manufacturers agreed to include a health warning in all cigarette advertising. Some states have laws that prohibit smoking in various public places. Yet the sale of cigarettes continues to increase.

In 1978, about 38 percent of the adult men and 30 percent of the adult women in the United States smoked cigarettes. Cigarette smoking had been increasing rapidly in the United States until 1964, when 52 percent of the men and 32 percent of the women 21 years old and older smoked. That year, the United States surgeon general first officially warned of the health hazards of smoking. In 1979, the surgeon general issued another report strongly linking cigarette smoking to heart disease, lung cancer, and other ailments. In spite of knowledge about the dangers, many young people became smokers. In the late 1970s, about 19 percent of the boys and 26 percent of the girls in the 17- to 18-year-old group smoked regularly.

Three quarters of adults who smoke took up the habit before age 21. One hundred thousand children under the age of 13 are smokers. A government survey for 1979 showed there are 1.7 million teenage girls and 1.6 million boys who are regular smokers. Many more women are smoking today than they did 20 years ago. Correspondingly, the lung cancer rate for women has increased 500 percent during the past 20 years. Women who smoke more than a pack and a half a day run a significantly higher risk of a heart attack than women who do not smoke. And women who smoke and use oral contraceptives containing estrogen have ten times the chance of having a heart attack and of damaging blood vessels, compared with women who do not smoke and do not use oral contraceptives.

4. Tobacco Toxins

Cigarette smoke contains more than 3,000 chemical substances, and several of them have been linked to the development pf diseases. The most dangerous substances are (1) carbon monoxide, (2) nicotine, (3) tars, and (4) smoke particles.

4.1 Carbon Monoxide

Carbon monoxide is a poisonous gas that interferes with the blood's ability to carry oxygen. It also contributes to heart disease and lung disorders and results in changes in the blood vessels that may lead to hardening of the arteries.

Symptoms of carbon monoxide poisoning include headache, vertigo, dyspnea, confusion, dilated pupils, convulsions and coma.

Carbon monoxide has long been recognized as a dangerous gas. It is present in concentrations of 1 to 5 percent of the gaseous phase of cigarette smoke. The amount of carbon monoxide produced increases as the cigarette burns down. Carboxyhemoglobin (union of carbon monoxide with the hemoglobin of the blood) levels in smokers vary from 2 to 15 percent depending on the amount smoked, degree of inhalation, and the time elapsed since smoking the last cigarette.

Carbon monoxide, which has 230 times the affinity of oxygen for hemoglobin, impairs oxygen transportation in at least two ways. First, it competes with oxygen for hemoglobin binding sites. Second, it increases the affinity of the remaining hemoglobin for oxygen, therefore requiring a larger amount of potential oxygen between the blood and tissues to deliver a given amount of oxygen. This situation usually results in a lower amount of oxygen in the tissues. It should be understood that oxygen is essential for most cellular activities and even a slight decrease can impair all bodily functions.

Carbon monoxide also binds to other iron-containing pigments, most notably myoglobin (a protein molecule found in muscle tissue), for which it has even a greater affinity than for hemoglobin under conditions of low oxygen. Researchers have not yet determined the exact significance of this binding but they do know that it is important in tissues such as the heart muscle, that has both high oxygen requirements and requires large amounts of myoglobin.

Carbon monoxide, at levels of exposure commonly reached by cigarette smokers, has been shown to decrease cardiac contractibility in persons with coronary heart disease. It has also been shown to produce changes like those of early atherosclerosis in the aortas of rabbits.

4.2 Nicotine

Nicotine results in stimulation of the nervous system and the heart and other internal organs. The effect on the nervous system is one of the reasons why people have such a hard time giving up smoking. Nicotine is poisonous. When any poison enters an organism, the body is stimulated to eliminate that poison. This condition soon leads to exhaustion and depression of all bodily organs. Nicotine may be a factor behind the many heart attacks and other conditions, including stomach and intestinal ulcers, that are related to smoking.

Nicotine is a colorless, oily, transparent vegetable chemical compound of the type called an alkaloid. It has a hot and bitter taste. It is found in small quantities in the leaves, roots, and seeds of the tobacco plant. It can also be made synthetically.

The quantity of nicotine in most tobacco ranges from 2 to 7 percent. It is most abundant in cheaper and

domestic varieties. Nicotine, as mentioned, is exceedingly poisonous. In a pure state, even a small quantity will result in vomiting, great weakness, rapid but weak pulse, and possibly collapse or even death.

Nicotine indirectly affects circulation by provoking catecholamine release. Catecholamide refers to active hormones, epinephrine and norepinephrine which are derived from the amino acid tryosine.

They have a marked effect on the nervous system, cardiovascular system, metabolic rate, temperature, and smooth muscle. The ingestion of nicotine induces a bodily response to rid itself of this poison. Thus, the body is stimulated and more catecholamines are released than would normally be the case. Heart rate increases and blood flow through the heart is also increased. The blood vessels going to the heart are constricted (due to the catecholamines) and this increases blood pressure. The presence of nicotine in the blood also results in an increase of serum fatty acids and creates the tendency for blood platelets to stick together. Nicotine also inhibits pancreatic bicarbonate secretions, resulting in a more acid condition in the body. This situation produces adverse systemic consequences.

4.3 Tars

Tars contain small quantities of carcinogenic substances. They are believed to be one of the major factors that lead to lung cancer and other types of cancer among smokers.

The tar from cigarette smoke has been found to result in malignant changes in the skin and respiratory tract of experimental animals, and a number of specific chemical compounds contained in cigarette smoke were established as potent carcinogens or co-carcinogens. Malignant changes including carcinoma are found in the larynx.

4.4 Smoke Particles

Smoke particles are as small as 1/70,000 inch. A smoker exhales most of the particles, but as many as 25 percent of them may be trapped on the lining of the lungs. The particles are later absorbed by cells in the lining. This absorption may cause the cells to function improperly and damage the lining of the lung. The particles can also cause excessive scar tissue within the walls of the lungs. Smoke particles probably help cause progressive destruction of the walls of the air sacs in the lungs of long-term smokers.

These, irritants cause immediate coughing and broncho-constriction after smoke inhalation; inhibit cilial action of the bronchial epithelium; stimulate bronchial mucous secretion; suppress protease inhibition; and impair alveolar macrophage function.

5. Cigarette Smoking And Chronic Disease

5.1 Lung Cancer

Studies have shown that men who smoke more than one pack per day are about 20 times more at risk Of developing lung cancer than are nonsmokers. Laboratory experiments show that tobacco smoke condensate can produce skin cancer in animals and that animals inhaling cigarette smoke may develop cancer of the larynx or lung.

Based on evaluations of detailed clinical and experimental data accumulated over the last 30 years, cigarette smoking has been clearly identified as a causative factor in lung cancer. The risk of developing

lung cancer increases directly with increasing cigarette smoke exposure as measured by the number of cigarettes smoked per day, total lifetime number of cigarettes smoked, number of years of smoking, age at initiation of smoking, and depth of inhalation. Lung cancer death rates for women are lower than for men but have increased dramatically over the last 15 years, coinciding with the increasing number of women smokers. This increase has occurred in spite of the fact that women smokers use fewer cigarettes per day, more frequently choose cigarettes with filter tips and low tar and nicotine delivery, and tend to inhale less than men.

A person who stops smoking has a decreased risk of developing lung cancer compared to the continuing smoker, but the risk remains greater than the nonsmokers for as long as 10 to 15 years after the person stops smoking. The toxic residues from the cigarette smoke remain in the lungs for a long time but the body will eliminate them as quickly as possible. This depends upon the amount of vital energy that a person has. Elimination can be speeded up if the individual adopts a generally more healthful lifestyle in regard to diet, exercise, sleep and rest, etc. Also of great benefit would be a long fast. This speeds up elimination of toxins most of all, because energy is conserved during this physiological rest and redirected from digestion to healing.

Pipe and cigar smokers experience mortality rates from cancer of the oral cavity, larynx, pharynx, and esophagus approximately equal to those of cigarette smokers. The risk of developing cancer of the lung is lower than the risk of cigarette smokers, but it is significantly above that of nonsmokers. This is probably due to the fact that pipe, cigar, and cigarette smokers experience similar smoke exposure of the upper respiratory tract, while cigarette smokers (due to their greater tendency to inhale) have a greater exposure of their lungs to smoke than pipe or cigar smokers.

5.2 Chronic Bronchitis and Emphysema

Chronic bronchitis and emphysema deaths are also about 20 times more frequent in people who smoke heavily. Both diseases can be produced in animals exposed to cigarette smoke. Pulmonary function tests often show airflow obstruction in the small airways even before chronic expectoration develops.

Toxins accumulate up to a saturation or "tolerance" point and then the body initiates a "housecleaning." At this point expectoration is seen. This is a sign of bodily healing and should not be suppressed. If you discontinue smoking at this point, the body will heal.

The adverse effect of smoking on mucociliary (hairlike processes on the mucous membrane that function to move excess mucus out of the lungs) clearance and on the normal balance between lung proteases (protein-splitting enzymes) and their inhibitors predisposes smokers to bronchopulmonary disorders and emphysema. As you can see, toxins from cigarette smoke interfere with many physiological activities. This situation always leads to acute, and finally chronic, illnesses.

5.3 Cardiovascular Diseases

Cigarette smoking accelerates atherosclerosis and may double the risk of myocardial infarction. Smoking may precipitate a heart attack. The risk of developing cerebrovascular disease, peripheral vascular disease, or aortic blood clots is also increased in smokers.

Coronary heart disease is the most frequent cause of death in the United States and is the most important single cause of excess mortality among cigarette smokers.

Cigarette smoking and hypertension and elevated serum cholesterol are the major risk factors for myocardial infarction and death from coronary heart disease. The cause behind hypertension and elevated serum cholesterol would include accumulated toxins due to wrong diet and enervating habits along with cigarette smoking. Cigarette smoking acts both independently as a risk factor and synergistically with the other coronary heart disease factors. The magnitude of the risk increases directly with the amount smoked.

The formation of carbon monoxide from cigarette smoke with hemoglobin in the blood to carboxyhemoglobin; release of catecholamines—epinephrine and norepinephrine; creation of an imbalance between myocardial oxygen supply and demand; and increased platelet adhesiveness leading to blood clot formation have all been demonstrated in smokers and are proposed as explanations for the excess coronary heart disease mortality and morbidity among smokers.

5.4 Peptic Ulceration

Peptic ulceration occurs more frequently and has a higher mortality rate in cigarette smokers than in non-smokers. In addition, the rate of ulcer healing is slowed.

When an organism is enervated due to bombardment of toxins from cigarette smoke, it is less capable of healing. Vital energy is so depleted that normal functions slow or are halted completely. Adverse effects will be seen throughout the entire body as all poisons induce systemic responses.

5.5 Premature Deaths From Conditions Caused By Smoking

Number of Deaths	Immediate Cause of Death
80,000	Lung Cancer
22,000	Other cancers (oral, larynx, esophagus, urinary, bladder, kidney, pancreas)
225,000	Cardiovascular disease
19,000	Chronic pulmonary disease

6. Added Industrial Pollutants

It has been estimated that every year 15.5 million people risk exposure to pollutants at the workplace and 400,000 people develop illnesses induced by the job. Tobacco smoke may transform workplace chemicals into much more harmful agents.

There are 15,000 toxic chemicals in U.S. industry today; each year about 400 new substances are introduced. But safety levels have been established for only a small fraction of the chemicals. The results of the interactions among these substances are incalculable. Some of the many toxic agents identified that can contaminate tobacco products are lead, inorganic mercury, inorganic fluorides, boron trifluorides, formaldehyde and cabaryl.

Some toxic agents in tobacco smoke may also occur in the workplace, thus increasing the smoker's exposure to that substance. For example, over 20,000 workers in 75 different occupational groups have potential occupational exposure to cyanide, which can form a complex that results in the disruption of the function of the thyroid. Hydrogen cyanide is one of the toxic compounds in tobacco smoke. In a

study of workers in electroplating exposed to cyanide, the majority complained of fatigue, headache, tremors of the hands and feet, pain, and nausea.

Studies with other toxic agents, such as carbon monoxide, have shown similar results. Among blast furnace workers, it has been found that the levels of carbon monoxide in the blood of smokers is double that found in smokers not similarly exposed. Levels of carbon monoxide were 7.5 percent; levels in excess of 5 percent can result in cardiovascular alterations.

Among other chemical agents found in tobacco smoke as well as the workplace are acetone, acrolein, aldehydes, arsenic, cadmium, ketones, lead, polycyclic compounds. Workers in such places who smoke are twice exposed to toxic substances: textiles, coal mining, uranium and gold mining, paint spraying, welding, firefighting, cooking kitchens and rubber. Workers exposed to radioactive gas, chlorine and coke ovens face similar dangers.

7. Tobacco Subsidies

At the same time HEW had increased its budget to $29.8 million for 1979 efforts to combat smoking, the Department of Agriculture ran a loan program to guarantee the tobacco farmer a fixed and high-support price. If the farmer's tobacco crop cannot be sold on the market at the fixed price, a federally-supervised stabilization corporation buys the tobacco with funds borrowed from the government. The low-interest rate for the loan is, to an extent, subsidized by the taxpayer.

The corporation holds the tobacco crop and can sell it later when the price is better. In fiscal 1979, the government loaned $227 million for such programs and spent another $9 million on tobacco research, grading, marketing news, and administration. More than half the loan monies were paid back within a few months.

In 1975 and again in 1979, the Surgeon General issued an official government document warning the U.S. citizens about the dangers of smoking. In these books (published by the U.S. Department of Health, Education and Welfare), extensive scientific evidence supports the fact that cigarette smoking is a life-threatening habit. Yet, the government continues to support this poison habit.

8. Effects On Fetus And Children

If a pregnant woman smokes, it has adverse effects upon her unborn baby. There is abundant evidence that maternal smoking directly retards the rate of fetal growth and increases the risk of spontaneous abortion, of fetal death, and of infant death in otherwise normal babies. There is also some evidence that children of some smokers are more likely to have measurable deficiencies in physical growth and development.

When the mother smokes, some of the harmful gases and poisonous substances in the smoke actually pass from her blood through the placenta and into the fetal bloodstream. One of these gases is carbon monoxide, which forces oxygen out of the red blood cells. Another powerful poison, nicotine, adds to

the damage by narrowing blood vessels, including those in the placenta itself. This decreases the amount of oxygen and food delivered to the unborn baby.

Although the fetus does not breathe before the moment of birth, it nevertheless practices some motions of breathing by exercising certain chest muscles. These movements slow down after the mother inhales just two cigarettes. Even when women quit smoking before pregnancy, their earlier smoking may still result in damage to the fetus, according to one extensive study.

Several researchers have investigated the effects of parental smoking on the health of children. One group of researchers conducted two telephone surveys of Detroit families to determine the relationship between children's respiratory illnesses and parental smoking habits. In both surveys, they found statistically significant relationships between the prevalence of children's respiratory inflammation and parental smoking habits. The body must rid itself of the toxins accumulated from the cigarette smoke. Respiratory inflammation, formation of mucus, etc., is one way of eliminating these toxins. This situation would become chronic if the parents continued to smoke in the child's presence.

Two researchers studied infant admissions to Hadassah Hospital in West Jerusalem and found a relationship between admissions for bronchitis and pneumonia in the first year of life and maternal smoking habits during pregnancy. A relationship between infant admissions and maternal smoking habits was demonstrable between the sixth and ninth months of infant life and was more pronounced during the winter months (when the effect of cigarette smoke on the indoor environment would be greatest).

The health of the fetus depends upon the health of the mother both during pregnancy and before conception. No one (not child or adult) can maintain health in a polluted environment.

9. Involuntary Smoking

The effects of smoking on the smoker has been extensively studied, but the effects of tobacco smoke on nonsmokers has only recently received much attention. The chemical constituents found in an atmosphere filled with tobacco smoke are derived from two sources—mainstream and sidestream smoke. Mainstream smoke emerges from the tobacco product after being drawn through the tobacco during puffing. Sidestream smoke rises from the burning cone of tobacco. Mainstream and sidestream smoke contribute different concentrations of many substances to the atmosphere for several reasons. Different amounts of tobacco are consumed in the production of mainstream and sidestream smoke; the temperature of combustion differs for tobacco during puffing or while smouldering; and certain substances are partially absorbed from the mainstream smoke by the smoker.

A major concern about atmospheric contamination by cigarette smoke has been due to the production of significant levels of carbon monoxide. Cigarette smoking in poorly-ventilated, enclosed spaces may generate carbon monoxide levels above the acceptable 8-hour industrial exposure limits of 50 parts per million. Exposure to this level of carbon monoxide even for short periods of time has been shown to reduce significantly the exercise tolerance of some persons with symptomatic cardiovascular disease. There is also some evidence that prolonged exposure to this level of carbon monoxide in combination with a high-cholesterol diet can enhance experimental atherosclerosis in animals.

Sitting next to a smoker, a nonsmoker can be exposed to carbon monoxide levels more than twice as high as the maximum set for industry exposure. When nonsmokers leave a smoky environment, it takes hours for the carbon monoxide to leave their bodies. Unlike oxygen, which is breathed in and then out

again in minutes, carbon monoxide in the blood lasts for hours. After three or four hours, half of the excess carbon monoxide is still in the bloodstream. Not enough research has been done on other toxic substances inhaled by nonsmokers in the presence of smoke: formaldehyde, oxides of nitrogen, ammonia, cadmium, hydrogen cyanide, pyrene, and hundreds more.

In a room filled with tobacco smoke, people experience eye irritations and distress. Contamination and odors are immediately created by such elements in tobacco smoke as ammonia and pyridine. (Pyridine is a strong irritant produced when nicotine burns).

The contamination in smoky rooms is so intense that when someone lights a cigarette, cigar, or pipe in an air-conditioned place, the air-conditioning demands can jump as much as 600 percent. Another finding from air-conditioning research is that the human body attracts tobacco smoke. Burning tobacco creates a high-electrical potential, whereas the water-filled body has a low one; so smoke in a room gravitates and clings to people.

The effect of involuntary smoking on an individual is determined not only by the quantity and toxicity of the smoke-filled environment, but also largely by the characteristics of the individual. This does not mean that all are not poisoned by this smoke but the more toxic that an individual is, the more pronounced his symptoms will be upon being exposed to this smoke. The severity of possible effects range from minor eye and throat irritations experienced by most people in smoke-filled rooms, to the anginal attacks of some persons with cardiovascular disease.

A substantial proportion of the U.S. population suffers from chronic cardiovascular and pulmonary diseases due to generally unhealthful diet and other poor living habits. It is this segment of the population most seriously jeopardized by conditions found in involuntary smoking situations. It may be "the last straw that broke the camel's back." The body could not tolerate the extra toxins that were being imposed upon it.

Persons with chronic bronchitis and emphysema nave considerable excess mortality under conditions of severe air pollution. In smoke-filled environments, levels of carbon monoxide and several other pollutants may be as high or higher than occur during air pollution emergencies. The effects of short-term exposure of persons with chronic obstructive bronchopulmonary disease to these conditions have not been evaluated.

10. Live Healthfully

It is best to avoid smoke-filled rooms but it is not always possible. If you do occasionally find yourself in a situation where you must spend some time in smoky rooms, your body will be better able to eliminate the poisons encountered when you have been living healthfully. A vital, healthy body can deal with these situations as they arise as long as they are not on a daily basis. When you do not follow the laws of life and eat wrong food, get insufficient exercise and sleep, etc., the organism will be in a toxic and therefore weakened condition. It will be less able to eliminate added toxins and these new poisons will be added to those already present. Ill health will quickly follow.

A pure and healthy body is also quicker to detect unhealthful environments, and you will be much sooner aware of a dangerous situation. Electronic air purifiers are useful as they help eliminate the pollution from the air and therefore maintain a purer environment.

11. Eliminating The Smoking Habit

The safest, quickest, and surest way to eliminate the cigarette habit is through a fast. Many people have had great success through this method. A fast will enable your body to purify itself of much of the accumulated toxins from smoking and your health will greatly improve overall. This will be noticeable physically and mentally.

After the fast, your body will be so pure that the sight, smell, and taste of cigarettes will be repulsive to you. The next step is to begin a more healthful eating program. After you quit smoking, all your food will taste wonderful. When you break your fast on a nice juicy piece of watermelon or a delicious sweet orange, it will be the best food you have ever tasted! Now continue on a diet of mostly fruits with some vegetables and a small amount of nuts or seeds. Ideally, all of these foods should be eaten raw. You will feel so great that you will never want to smoke again!

12. Questions & Answers

Does a filter on the tip of a cigarette make them safer?

> No, there are no safe cigarettes. One study suggests that a smoker who switches from nonfilter to filter cigarettes may actually face an increased risk of coronary heart disease, primarily because of the higher carbon monoxide levels in smoke inhaled through filters. The paper surrounding the filter is relatively nonporous, and thus more carbon monoxide is passed on to the smoker than if no filter were present.

Have cigarettes with reduced tar and nicotine made any impact on the deleterious effects of smoking?

> Before the 1960s, many cigarettes contained 42 milligrams (mg.) of tar and 3 mg. of nicotine. By 1977, the average cigarette produced 16.6 mg. of tar and 1.09 mg. of nicotine. In a study of more than a million men and women, total death rates for those smoking cigarettes with reduced levels of tar and nicotine were lower than for those smoking brands with higher levels. However, death rates for those who smoked lower levels were still 30 to 75 percent above the rates for nonsmokers.

Do the harmful effects from cigarette smoking disappear immediately after quitting this habit?

> Many toxic substances from smoking accumulate in the blood and tissues. It lakes a long time for the body to eliminate all of these harmful residues and much vital energy is required for this eliminative process. You can greatly assist this process, however, by going on a fast. Energy normally diverted into the digestive process can then be used for healing and repair.

What country produces the most tobacco?

> China is the leading tobacco-growing country producing 1,064,000 tons annually. The United States is second with 788,200 tons. It is sad to think that so much good land and energy is going into such a worthless crop. This same land could produce enough fruits and nuts to feed millions of people and the results would be beneficial, not harmful as they are

with the tobacco industry.

Article #1: "A Small Fire at One End and a Big Fool at the Other" by Dr. Keki R. Sidhwa, N.D., D.O.

The title of this article, a quotation by G. B. Shaw, is an apt one for those who are slaves to smoking, for there is not a single thing about smoking in itself that is attractive, and many smokers actually dislike tobacco.

The man or woman who takes it up for one or the other reason, mainly psychological, soon acquires a mental habit which, in time, becomes a purely physical addiction. To say that the body craves the tobacco in any form is a gross insult to the inherent intelligence of the body cells. Tobacco contains 19 poisons, each one of them more damaging than the others, to the living cells. The body repels and abhors tobacco, as it does all poisons. The first puff of a cigarette by a nonsmoker shows how alert the body is in its defensive capacity. An all-out defensive action is started at the first contact of these poisons with the living organism and continues throughout the life of the smoker.

With each succeeding smoke, the defensive action of the living cells gets less and less until all vital activity of the ells concerned is reduced, and the organism is prostrated with exhaustion in deep stupor. The so-called "tolerance" of the smoker to his particular brand, like the pet sedative of the drug addict is but a mask hiding the true state of the living organism—complete enervation and exhaustion.

The natural resistance of the body is lowered and the body compensates by not reacting violently as when it was vital and vigorous. In other words, in precisely the proportion to which one becomes accustomed to the use of any poison, is his system depraved and his defensive powers reduced. The ability to smoke like a "man" without being sick is an evidence of cell weakness and physiological depravity. Hence the reason why a stronger and stronger dose is required before an addict actually gets acutely ill. To deprive him of his smoking means resting his system which as it gets stronger and stronger asserts its power in the form of active symptoms, in resistance against the cumulation of the drug, and this being disturbing and distressing like the usual fever or running nose, the smoker seems to crave his smoke, this hubby-bubby so that he can silence the waking sentinel again. The real effect of the next smoke is to renarcotize his nerves which can only cry out and reveal his true condition when they are no longer under the influence of the drug.

Some of the 19 poisons are the deadliest in their toxic effect, e.g. pyridine, nicotine, prussic acid, and carbon monoxide. Here is a short list of some of the most poisonous matter present in your particular manna from heaven.

Each one vies with another to be the first to show you the portals of the post-mortem existence somewhere beyond the clouds:

1. Carbon monoxide - prevents oxidation of blood.
2. Nicotine - half a drop is fatal.
3. Formic aldehyde - a strong irritant.
4. Carbolic acid - burns your throat.
5. Pyridine.
6. Furfural - responsible for "short windedness" and tremors.
7. Acrolein - degenerates the brain cells.

8. Saltpetre in the paper keeps the cigarette burning.

One cigarette causes a rise of 10-15 points in your blood pressure, i.e., increasing the work of your heart by 10%. Let alone its connection with lung cancers and hardening of the arteries (arteriosclerosis) smoking destroys inclination for marital embrace and the ability to copulate and to reproduce. Children of habitual smokers die early, are prematurely born, are stillborn, or are miscarriages.

Dr. Lucas, physician at Guy's Hospital, London, observed that testes dried up, atrophied, and shrunk to the size of a pea and sometimes also the sex organ. Tobacco impotence is steadily rising in the middle ages and 30% of women are frigid due to the tobacco habit. Women working in tobacco factories seldom have children. Yes, don't believe it now, but every smoke is a tiny drop of old age creeping on you unnoticed.

Fully three quarters of the cigarette smokers begin with the resolution of controlling their indulgence. But how many succeed? The answer is practically none of them, because poison demands more poison. Compromise plans won't work. All sorts are tried. A friend of mine conceived the idea of smoking so much a day and no more. It didn't work a week with him. Another wanted to smoke only in the evening after dinner and work. He stuck to it for a month and then gave it up as he was smoking more per evening than in the whole day previous to his embarking on this new compromise.

Yes, dear reader, they all fail, these so-called half measures. A few that succeed in rationing themselves thus, are relatively few and mostly those who "smoke" in order not to offend the boss or the company director—as if he really cared. And even if you are one of them, the difference between you and the smoker who goes the whole hog is only a matter of degree—the effect is still harmful and never beneficial, and it always will be.

Stand firm in an unqualified refusal to indulge in this bad habit! That is the only plan that will succeed. If you smoke to please, what about your nonsmoking friends! Keep your self-respect and your health at the same time.

Even the "tapering-off" plan when a smoker decides to quit, nearly always fails. There are two ways of getting into cold water for a swim—a headlong dive or a gradual wade in. Similarly, there are two ways of quitting tobacco— sudden stoppage and the tapering-off plan. If your heart is sound, the dive is your better course at the pool. The same applies for the tobacco—and especially if your heart is a bit *wanky.*

The wade-in system is an acceptance of failure, of self-doubt, and this attitude is really what defeats the one who wants to quit tobacco. Decision, not doubt, is what you need most. Why prolong the misery and play with temptation. "DIVE IN." It is the easier of the two in the long run. Your friends can't get at you with "have you had your quota today?" "One more today, two less tomorrow," etc.

Be firm and active—that's the only plan with smoking. Burn the bridges behind you; solemnly declare to yourself and others that you have quit once and for all and see the strain lift from you. See the relief, both mental and physical, in your eyes. Stick to it and a time will come when you will be proud of such an achievement. If you don't do it this way and now, you'll never be really free from it with (any other plans, because the desire to quit is not strong enough.

An uncompromising decision, as above, will establish self-confidence and self-respect. The inconvenience will be much briefer and maybe a little more keener than on the one-by-one plan.

So there you have it all. Health for all is there for you too. So light your match and burn the cigarette at both ends. Then the fire burns and the fool with it too. The wise one stands back and smiles.